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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/519,741      | 03/06/2000  | Aurel D. Brumboiu    | 28959-7             | 7977             |

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EXAMINER

CROSS, LATOYA I

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1743

DATE MAILED: 04/22/2004

12

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/519,741

Applicant(s)

BRUMBOIU ET AL.

Examiner

LaToya I. Cross

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 20-63 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-15, 33-39 and 43 is/are allowed.
- 6) ☒ Claim(s) 1-10, 20-25, 40 and 41 is/are rejected.
- 7) ☒ Claim(s) 26-32 and 42 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7-23-03 has been entered.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-10, 20-25, 40 and 41 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Independent claims 1 and 8 have been amended to recite a method for determining the response of a gas-in-liquid concentration measuring device where a second mathematical function representative of the response of the gas-in-liquid concentration measurement device when the concentration of the gas is above the solubility threshold is determined. The original specification lacks support for such a method. Applicants' specification provides for a method of determining the concentration of gas in a liquid, as in independent claim 14, and a method for obtaining a correction factor for measuring a concentration of gas in a liquid (as was recited in the

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originally filed claims). Further, the original specification provides for a method for preparing a concentration measurement device, as in independent claim 11. There is no support in the original specification for determining the response of a gas-in-liquid concentration measuring device. In fact, the specification fails to even mention the "response of a gas-in-liquid concentration measuring device". The claims as amended are considered to be new matter. The new matter must be cancelled.

*Claim Rejections - 35 USC § 103*

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 44-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,729,342 to Yokoyama et al (hereinafter Yokoyama et al) in view of US Patent 5,528,923 to Ledez et al (hereinafter Ledez et al '923).

Yokoyama et al teach a method for analyzing the concentration of gas, possibly containing gas bubbles. The method involves obtaining a reference spectrum for a known gas. The reference spectrum for the known gas is used to derive a sample spectrum for the gas in the sample fluid. See abstract. Data processing is used to determine from the reference spectrum and the sample spectrum, the concentration of gas in the liquid sample. To correct for the existence of bubbles in the liquid sample, a correction coefficient (correction factor) is used. See col. 3, lines 29-65.

Yokoyama et al differ from the instant invention in that Yokoyama et al compares absorbance spectrums, whereas Applicants compare solubility thresholds to determine the content of gas and a correction factor therefor. Both absorbance spectrums and solubility

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thresholds are measurable parameters that an ordinarily skilled artisan would have been able to determine. Ledez et al '923 teaches using gas solubility to determine the content of gas in a liquid sample. See col. 10, lines 10-15. Ledez et al '923 teach that gas solubility measurements allow for difficult gases, such as toxic and anaesthetic gases to be determined easily. In conducting the method of Yokoyama et al, it would have been obvious for one of ordinary skill in the art to measure the solubility of gas to determine its content in a sample because such would allow for a wide variety of gases to be determined, even those which have conventionally been difficult to analyze.

With respect to Applicants' "sufficient measurements", the ordinarily skilled artisan would have been able to determine when enough measurements would have been taken to have sufficient data to come to an accurate conclusion.

Therefore, for the reasons set forth above, Applicants' claimed invention is deemed to be obvious within the meaning of 35 USC 103, in view of the teachings of Yokoyama et al.

#### *Allowable Subject Matter*

6. Claims 11-15, 33-39 and 43 are allowed.
7. Claims 26-32, 42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The above mentioned claims are being indicated as allowable because the prior art of record fails to teach or suggest determining the concentration of gas in a liquid whereby 1) a gas concentration measuring device is used to determine the concentration of gas in the liquid and 2) a correction factor is applied whereby the correction factor is obtained by a comparison

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of a first mathematical function, generated from measurements of the gas at known concentrations, and a second mathematical function, deduced from a theoretical response using the first mathematical function.

### *Response to Arguments*

8. Applicant's arguments filed July 23, 2003 have been fully considered but they are not persuasive. With respect to the 112, 1<sup>st</sup> paragraph rejection of claims 1-10, 20-25, 40 and 41, Applicants have not provided arguments or amendments to overcome the new matter rejection. The original specification does not provide for "response of the gas-in-liquid concentration measurement device". The new matter rejection is maintained.

With respect to new claims 44-63, Applicants have re-added the subject matter of the original claims. The claims are considered to be obvious over Yokoyama et al in view of Ledez et al because of the teaching of determining the amount of gas in liquid based upon solubility thresholds. The rejection was withdrawn previously (with respect to original claims 1-3, 6, 8, 9, 11 and 13-15) because of Applicant's amendment to redefine the claimed invention. In response to this Office Action, Applicants should provide persuasive arguments and/or further amendments to claims 44-63, to overcome the rejection.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaToya I. Cross whose telephone number is 571-272-1256. The examiner can normally be reached on Monday-Friday 8:30 a.m. - 5:00 p.m..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Jill Warden  
Supervisory Patent Examiner  
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